

**ABSTRACT OF THE DISCLOSURE**

5       **METHOD, APPARATUS, AND PROGRAM TO KEEP A JVM RUNNING  
DURING THE SHUTDOWN PROCESS OF A JAVA BASED SERVER  
EXECUTING DAEMON THREADS**

10       A single normal Java thread referred to as a  
"waiter" thread is used to prevent premature exit of the  
Java Virtual Machine during the shutdown process of the  
server application by waiting for any daemon threads in  
the JVM to complete execution. Using this mechanism, any  
daemon thread flagged by the application runs to  
completion before the JVM is allowed to exit. Once all  
15       flagged daemon threads exit, the waiter thread exits and  
allows the server application to properly terminate.  
The waiter thread uses an efficient mechanism to maintain  
a queue of threads. When a daemon thread is flagged, it  
is simply appended to the end of the queue. The waiter  
20       thread waits for the first thread in the queue to  
complete. Once the first thread in the queue completes,  
it is removed from the queue. At this point, the queue  
is searched for any other inactive threads and those  
threads are also removed from the queue. This allows the  
25       waiter thread to efficiently manage the queue and keep  
the memory and resource requirements to a minimum.

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